

REMARKS

Reconsideration of this application is respectfully requested. Claims 1-53 remain in the application. Claims 1 and 20 have been amended. No claims have been added or canceled.

The Examiner has requested applicants provide a certified copy of PCT application PCT/SG04/00411. Applicants will provide the requested certified copy by at least the allowance of one or more of the claims.

Applicants reserve all rights under the doctrine of equivalents.

Rejections under 35 U.S.C. § 102(b)

Claims 1-25, 52, and 53 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Thiagarajan, WO 03/084205. Applicants respectfully submit that the Examiner appeared to not take into consideration the foreign priority documents and international priority date for the current patent application. For the Examiner's convenience, applicants have submitted uncertified photocopies of these priority documents in a submission accompanying this response. Certified photocopies of these priority documents will follow at a later date.

If these priority documents provide support for applicants' claims, then the appropriate rejection is under 35 U.S.C. § 102(a). Furthermore, applicants respectfully submit that Thiagarajan is not prior art under 35 U.S.C. § 102(e) because Thiagarajan is not a patent application filed by another. Should the Examiner maintain that Thiagarajan is 35 U.S.C. § 102(a) prior art, applicants do not admit that Thiagarajan is prior art and reserves the right to swear behind the reference at a later date. Nevertheless, applicants respectfully submit that Thiagarajan does not disclose each and every element of the invention as claimed in claims 1-25, 52, and 53.

Thiagarajan discloses a system for compressing highly correlated image data (Thiagarajan, Abstract). The system captures the image, converts to digital form, reshapes the data, encodes the data repetitions into bit-plane index and stored values, stores the

compressed data and retrieves the data for decompression (Thiagarajan, Abstract). Thus, Thiagarajan is directed to compressing image data.

Claim 1 recites:

A method for compressing image data of an image, comprising:
transforming the image data into a bit plane of first and second values;
comparing each image element with a previous image element and if they are equal, recording a first value into a bit plane;
if they are not equal, recording a second value into the bit plane; and
encoding repeating first and second values in the bit plane into a bit plane index, wherein the compressed image is able to be decompressed using the bit plane index and the bit plane.

(Claim 1, as amended, emphasis added).

Claim 1 recites “wherein the compressed image is able to be decompressed using the bit plane index and the bit plane.” The section of Thiagarajan cited by the Examiner to support his rejection merely discloses that data is retrieved for decompression (Thiagarajan, Abstract). This section does disclose how the decompression is done. Thus, Thiagarajan does not disclose “wherein the compressed image is able to be decompressed using the bit plane index and the bit plane” as recited in claim 1.

Accordingly, claim 1 and claims 2-19, 52, and 53 that depend on claim 1 are not anticipated by Thiagarajan.

Claim 20, as amended, recites:

A system for compressing image data of an image, comprising:
a data transforming module to transform the image data into a bit plane of first and second values by comparing each image element with a previous image element and if they are equal, recording a first value into the bit plane, and if they are not equal, recording a second value into the bit plane;
a data rearranging module to rearrange the transformed image data by causing elements of the image data to be repetitive;
and an encoder to encode repeating first and second values in the bit plane into a bit plane index, wherein the compressed image is able to be decompressed using the bit plane index and the bit plane.

(Claim 20, as amended, emphasis added).

As noted above in discussing claim 1, Thiagarajan does not disclose “wherein the compressed image is able to be decompressed using the bit plane index and the bit plane.” Therefore, claim 20 and claims 21-24 that depend on claim 20 are not anticipated by Thiagarajan.

Claims 26, 27, 30, 32, 33, and 36 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ordentlich, U.S. Patent No. 6,263,109. Applicants respectfully submit that Ordentlich does not disclose each and every element of the invention as claimed in claims 26, 27, 30, 32, 33, and 36.

Ordentlich discloses a method of generating an embedded bitstream from quantized Wavelet transform coefficients by storing coefficients in three bit planes. Ordentlich is directed towards estimates of probabilities. Therefore, Ordentlich is not a lossless system.

Claim 26 recites:

A method for decompressing compressed data, comprising:
 run-length decoding the compressed data;
 arithmetically decoding the compressed data;
 reverse transforming the decoded data; and
 rearranging the transformed decoded data into a lossless decompressed form.

(Claim 26, emphasis added).

Claim 26 recites a method for decompressing compressed data that includes run-length and arithmetically decoding the compressed data. Because Ordentlich is directed towards estimates of probabilities, Ordentlich does not disclose a lossless system and is not a method for decompressing compressed data.

Furthermore, the section of Ordentlich cited by the Examiner as disclosing run-length decoding the compressed data merely discloses that Ordentlich’s run sequence can be decomposed into two additional subsequences. However, this section of Ordentlich’s does not disclose run-length decoding compressed data.

In addition, the section of Ordentlich cited by the Examiner as disclosing arithmetically decoding the compressed data only discloses that arithmetic encoding may be used and a decoder can be used to reverse the encoding process. However, this section is directed to handling encoded data. As is known in the art, encoding data is preparing data for a particular format and is not the same as compressing data. Thus, because Ordentlich discloses decoding encoded data and not decoding compressed data, Ordentlich does not disclose run-length and/or arithmetic decoding compressed data.

Thus, Ordentlich does not disclose that claimed element. Therefore, claim 26 and claims 27 and 30 that depend on claim 32 are not anticipated by Ordentlich.

Claim 32 recites:

A system for decompressing compressed data, comprising:

a run-length decoder and an arithmetic decoder for decoding the compressed data;

a reverse transforming module to reverse transform the decoded data; and
a data rearranging module to rearrange the transformed decoded data into a lossless decompressed form.

(Claim 32, emphasis added).

Claim 32 recites “a system for decompressing compressed data” that includes “a run-length decoder and an arithmetic decoder for decoding the compressed data.” As discussed above, Ordentlich does not disclose decompressing compressed data and run-length and arithmetically decoding compressed data. Thus, Ordentlich does not disclose that claimed element. Therefore, claim 32 and claims 33 and 36 that depend on claim 32 are not anticipated by Ordentlich.

Rejections under 35 U.S.C. § 103(a)

Claims 28, 31, 34, and 37-51 stand rejected under 35 U.S.C. §103(a) as rendered obvious over Ordentlich and Thiagarajan. As discussed above, applicants respectfully submit

that if the priority documents for the current application provide support for applicants' claims, then the appropriate rejection is under 35 U.S.C. § 102(a). Should the Examiner maintain that Thiagarajan is 35 U.S.C. § 102(a) prior art, applicants do not admit that Thiagarajan is prior art and reserves the right to swear behind the reference at a later date. Nevertheless, Applicants respectfully submit that the combination is improper and does teach or suggest each and every element in claim 28, 31, 34, and 37-51.

Applicant respectfully submits that the combination of Ordentlich and Thiagarajan is improper. On one hand, Ordentlich discloses a bit plane that is used to store image pixel values. On the other hand, Thiagarajan's bit plane is used to code the repetition of data in either the horizontal and/or vertical directions of the image. The Examiner asserts that one of skill in the art would want to incorporate the method and system of compressing image and other highly correlated data stream of Thiagarajan into context-based ordering and coding of transform coefficient bit-planes for embedded bitstreams of Ordentlich. However, modifying Ordentlich with Thiagarajan would change how Ordentlich works because Ordentlich uses a bit-plane to store image pixel data whereas Thiagarajan uses the bit-plane to store information on how the data is coded. Thus, modifying Ordentlich's system with the system of Thiagarajan would change the principal operation of Ordentlich. If a proposed modification would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claim *prima facie* obvious. *In re Ratti*, 270 F.3d 810, 123 USPQ 349 (CCPA (1959)). However, suggesting that these references are combinable relies of impermissible hindsight based on the applicants' disclosure.

Applicants' claims 28, 31, 34, and 37-51 depend on independent claims 20 and 32. In these claims, applicants recite run-length and arithmetically decoding compressed data. As described above, Ordentlich does not disclose these claim elements. Furthermore, because Thiagarajan is directed to compressing data and not decompressing data, Thiagarajan does disclose these claim elements.

Even if the references are combinable, the combination lacks the element claimed by

the applicants. As per above, applicants respectfully submit that the combination of Ordentlich and Thiagarajan does not teach or suggest run-length and arithmetically decoding compressed data. Therefore, applicants respectfully submit that claim 20 and 32 and claims 28, 31, 34, and 37-51 that depends on them are not rendered obvious by the combination. Accordingly, applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Dependent Claims

In view of the above remarks, a specific discussion of other dependent claims is considered to be unnecessary. Therefore, applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

SUMMARY

Claims 1-53 are currently pending. In view of the foregoing amendments and remarks, applicants respectfully submit that the pending claims overcome the applicable rejections.

If the Examiner determines the prompt allowance of these claims could be facilitated by a telephone conference, the Examiner is invited to contact Eric Replogle at (408) 720-8300 x7514.

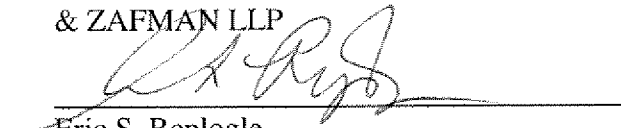
Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicants hereby requests such extension.

Respectfully submitted,

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